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Reg. U. S. Pat. Off.

Volume 8 **JUNE 1932** **Number 6**

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PLASTICS & MOLDED PRODUCTS

Reg. U. S. Pat. Off.

Volume 8 JUNE, 1932 Number 6

Our Homesick Plastics

By F. E. Brill

General Plastics, Inc.

"THE tragedy is that each and every (new) product aims to replace and imitate existing materials—materials that we already have. Instead of enriching us, they make us poorer being poor substitutes, whereas they might proudly be themselves."

Thus does Paul T. Frankl, a well-known industrial designer, lay his finger on one of the greatest troubles besetting the plastics industry. For who can deny that both molded and laminated plastics have been dishonest and imitative—reluctant to come out in the open and hold up their heads proudly beside other basic materials?

Imitation

Plastic materials are suffering from the same homesickness for the past that is cramping the building industry. Our new synthetics—plastics, alloys, paints, finishes, are widely used, but we speak the language of these new materials with a dreadful accent. We torture our modern building materials into imitations of French peasant cottages; we bully our synthetic shingles till they somewhat resemble thatched roofs; we design our electric clocks to look like the traditional tambour—space-wasting and cumbersome—or, just as bad, like a German church; we house our radios in linen chests and Gothic dog-houses instead of radio cabinets; we score our wallboard to look like the tile it is trying to replace; we print our linoleum with imitation cracks and nail-holes—the worst feature of its main competitor, wood flooring; and we worry our laminated plastics into simulation of veneers and marble, and our molding compounds into imitations of wood and other compositions so inherently inferior.

We are certainly degrading ourselves—mis-using the gifts of our new synthetic age. Grecian columns would never have been beautiful or lasting had they tried to be anything but roof-supports. Likewise, our million-all-alike moldings will never survive unless we make them frankly expressive of the machine - age which made them possible.

Until we divorce ourselves from the past, recognize the existence of the new age, and design our products honestly, bringing out their inherent beauty to the fullest extent—we are actually handicapping the industry upon which our livelihood depends.

Blame

The blame is not on our shoulders. We plastic people simply have grown too fast. In ten years, we paralleled a similar development of the glass industry which was strung out over many leisurely centuries. We were heralded as a substitute material, and for many years we thrived on substitution — replacing metal, wood, glass, porcelain, and rubber, in thousands of industrial nooks and crannies. But we carried it too far. We followed the path of least resistance, and tried to be as much like the materials we replaced as we possibly could. We tried to make up for our lack of design-training by copying our

Plastics have a beauty of their own and fabricators will find their services wanted when they offer molded products designed to bring out this beauty—a machine-age beauty. Synthetic materials induce a disturbing note when attempts are made to imitate natural materials with them—Nature's beauty but also Nature's flaws. A new school of design—Industrial Design—has grown up which is trying to coordinate the virtues of new materials with a modern, buying taste.

predecessors. And where we had the price-advantage, we got away with it.

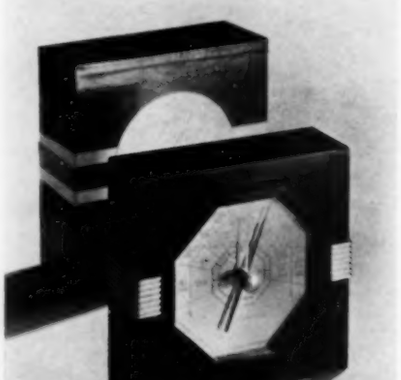
But times have changed. The markets where plastics have both price and structural advantages are becoming few and far between, and we find ourselves fighting wood and metal with no odds in our favor. The industrial nooks and crannies have been practically filled, and we are coming out into the open. We bid for favor in the consumer's eye, by trying to fool her into thinking we're burled walnut or tortoise-shell and that the clock-case we're formed into isn't a clock-case at all, but rather a segment of the Beauvais cathedral. Quite justly, she turns us down, preferring, for instance, a wooden box which has the honesty to be a wooden box.

When plastics cease imitating their inferior competitors and begin to capitalize on their own beauty, we will begin to find that plastic materials have plenty of advantages over lower-priced competitors.

Machine-Age Beauty

For plastics really have beauty. Theirs is a new machine-age beauty, a type of beauty that reaches its peak when it expresses the age to which it belongs. Theirs is the sort of beauty which finds itself ideally suited to the machine-age house, with its smooth, sanitary walls and floors, which we will have to adopt if we are to survive the new industrial age at all. Theirs is the sort of beauty which finds its highest expression in the ocean liner—yes, and even our lowly bottle caps—honest, functional, contributing some real advantage and not being afraid to admit what it is. We can't make our plastic sheets look like wood, we can't make our molded boxes look like wood or metal boxes, and we can't make our novelties look like 19th Century carvings and turnings—and hope to sell them.

For after all, plastic materials breathe mass-production and not meticulous craftsmanship. No one—not even the most gullible housewife—ever picks up a molded walnut smoking-set and thinks for a moment that it is laboriously carved from a tree-trunk. Its synthetic origin is never concealed, and the consumer subsconsciously resents the manufacturer's low estimation of her intelligence. Why are we afraid to admit our synthetic, mass-production qualities—our greatest asset? Why don't we use the priceless gifts we have, and put them to work for us? Why do we mold our toasters in the same ugly form as the metal ones we are trying to displace? Why don't we have more of our pieces designed in the fresh, honest way Walter Teague designed the Taylor Stormoguide — a product that exudes mass-production from every geometric angle and a product that increased sales over 65%? Why don't more of our electric clocks strike out for themselves like the Hammond Junior, an example of trained design that doesn't look like something else, a clock designed expressly for plastics and automatically excluding other materials, a clock that sold by the millions? Queer-looking or not, these frank new departures roll up new sales records, and help both the molder and the industry. Our dishonest walnut novelties are on the bargain counter.



A Walter Dorwin Teague Stormoguide design that increased sales 65%—honest, fresh, a new departure.

●

How trained design helps the molder. This clock ran to millions of units. It looks like a clock.

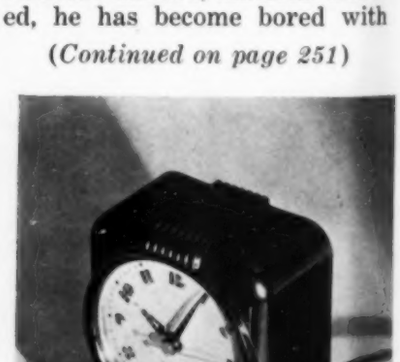
It's happened before in other industries. When houses became too monotonous, we stopped buying houses. When motor-cars copied their competitors and last year's models too much, we stopped buying motor-cars. When furniture had nothing but medieval reproductions to offer, we stopped buying furniture.

Plastics has the same problem, the same road to follow. But ours is an easier problem, for we are new, not yet steeped in tradition, more versatile, and more docile to the touch of the trained designer's hand.

Solution

The sooner we recognize the separate and distinct function of industrial design, the sooner our problems will fade. We must embrace the new machine-age designer, and stop thinking of him as an erratic aesthete. Aesthetic he may be, but he has shortened his hair, moved from Greenwich Village up to 42nd Street, laid away his palette and littered his desk with new metals, new glass, new paper, new alloys, new finishes, new synthetic compositions. He has deserted the atelier for the department store, and you see him loitering at retail counters, delving into the mysteries of why people buy things. You find him in advertising workshops, studying product appeals, and in the factories, studying production. He has become sales-minded, machine-minded, material-minded, he has become bored with

(*Continued on page 251*)



The Sunculator

The Cel-O-Glass Carriage Hood which proves a boon to babies and baby carriage dealers

By S. A. Atkins

Acetol Products, Inc.

Patent Pending

The baby in the carriage with the old-fashioned hood might just as well be in a dark cellar for all the ultra-violet rays he is getting. But the baby under the Cel-O-Glass Sunculator gets the beneficial ultra-violet while protected from the burning infra-red rays.

THERE has just recently appeared on the market a new product, the Cel-O-Glass Sunculator. This is a baby carriage hood that will fit any standard baby coach and is being manufactured by Harry Derman, Inc. of Long Island City. The coating on Cel-O-Glass is made principally from cellulose acetate and the basic structure of Cel-O-Glass is a specially constructed wire cloth.

It has been said that there has been no major improvement or change in baby carriages for nearly fifty years and the almost instantaneous acceptance of the Sunculator by department stores and mothers would indicate that this statement is true.

Department Store Attitude

The Sunculator was first offered by R. H. Macy in New York on May 11th and following this initial showing department stores in every sizable city in the country had Sunculators on sale. The fact that this newly developed carriage hood would transmit the ultra-violet rays of the sun and would filter the harmful infra-red rays that burn had much to do with the acceptance by mothers. In the introduction of the Sunculator the scientific data on the value of the ultra-violet rays through Cel-O-Glass was presented in a booklet and mentioned in all newspaper copy.

One of the executive officers of the largest department store in the country expressed the opinion that five hundred thousand Sunculators would be bought by American mothers within the first year and while it is yet too early to affirm this statement, it appears thus far that this department store executive was not too optimistic.

A New Sales Note

The department store advertising of the Sunculator struck a somewhat new note as shown by an ad which the R. H. Macy Company used. And after all, this might be expected because it is not every day that a store can offer an item of such utilitarian value and at the same time offer to the mothers of the country an additional source of Vitamin D which is furnished by the ultra-violet rays of the sun. The Sunculator has already inspired at least one editorial comment and the following editorial in the *World Telegram* probably reflects the attitude of the professional observer as well as the layman.

In Glass Houses

"If for chickens, why not for babes?

On the market have come baby carriages with tops of special glass to let in the ultra-violet rays and keep out the dust of summer and the cold of winter.

This sort of glass has been used for a good while to speed up the growth of chicks for market—the chicks get their normal supply of actinic rays without going out of doors and losing pounds running around too much.

It is this way in most such inventions—guinea pigs, chickens, horses, rabbits get the original benefits, but mainly the martyrdom, and the finished product (sometimes themselves) is passed along to the human customers."

In Schools and Hospitals

"This special ultraviolet-ray glass is coming into wider use in solariums, in schools and hospitals and private homes.

Factories are turning more and more to glass. A Chicago specialist recently predicted hospitals with glass walls. We are glad to note that a one-way glass also is on the market, a glass you can see out through without being seen."

The Sunculator stands out as an achievement. It is at once beneficial for babies, it stimulates business in the carriage trade, and finally, gives cellulose acetate, a synthetic plastic with many excellent properties, a new outlet.

Economic Forces Cause New Shifts In The World Plastic Industry

A Large Russian Plant, Japanese Pyroxylin Exports, German Molders Move to Britain, Figure in Month's Reports

TWO German manufacturers, located in the Luedenscheid District of Germany, will each open branch factories in England in the near future. Both of these firms manufacture electrical installation equipment out of artificial resin having their own molding establishments, and have based their production according to the tastes and the demands of the British market. The fact that the sinking of the English Pound Sterling and the increases in tariff rates resulted in a narrowing of the margin of profit in the case of those sales contracts which were arranged prior to that time was not alone responsible for this move since both German firms delivered high quality material for which there was a large demand in the British market, and even a rate of exchange of from 15 to 16 marks per pound sterling and an import duty of 50 per cent enabled the firms to compete in that market because of better methods of labor and designs of samples.

"Buy British" Influence

It was mostly the successful campaign of "Buy British" that endangered the English business. It was found necessary, in order to retain the British customers, to remove to Great Britain those parts of their factories which catered to the English market. One of the firms hopes to enlarge its circle of customers thereby; its experience in English business was that the main part of such orders always went to British firms nothwithstanding the fact that they were usually about 20 per cent more expensive. The present German plants will continue to operate and will even deliver the necessary metal parts which they can produce cheaper than the British branches would be able to, regardless of the import duties.

Russian Plastics Factory Opens

DURING February the world's largest factory for the production of plastics was completed at Vladimir, in the Ivanov Industrial Region, according to the Economic Review of the Soviet Union. When this plant reaches full capacity, it will have an output ten times as great as that of all similar plants in Germany. The Vladimir factory is to supply the machinery, automobile, tractor, electrical, textile, and other industries with plastic products.

Japanese Pyroxylin Exports

WITH the exception of pyroxylin toys and other general fabricated ware, the Japanese pyroxylin industry was but slightly affected by curtailed buying in world markets in 1931. Export of combs increased both in volume and value while toothbrushes decreased but slightly in volume and value as compared with 1930.

The depreciated value of the Japanese yen, which closed about 20% below par ($.498), was a decided advantage to Japanese pyroxylin producers since their sheet, rod and tube stock became more attractive to buyers in those countries which had a stable currency. Japanese exports of pyroxylin solids in 1931 increased 93% over 1930, having a valuation 68% higher than in 1930.

The totals, as reported by Mr. R. Sekido, publisher of the *Nippon Celluloid Jihosha*, are indicated in the table below.

The sale of camphor is a Japanese Government monopoly.

Japanese Plastics Trade Museum

The publisher of the Japanese pyroxylin trade paper is sponsor of a movement to establish a permanent collection of materials, finished articles, periodicals, year-books and catalogs pertaining to the plastics industry. The co-operation of American and European producers and publishers has been requested.

The collection will be a source of reference to Japanese manufacturers and merchants and, according to Mr. Sekido, should serve to further stimulate the rapidly growing interest is plastics in Japan. Samples and descriptive literature may be sent to R. Sekido, *Nippon Celluloid Jihosha*, Tomio, Nara-Osaka Line, Japan.

Japanese Pyroxylin Exports

	1931		1930	
	Quantity	Value (,000 yen)	Quantity	Value (,000 yen)
Combs (gross)	155,772	763	153,348	631
Toothbrushes (gross)	193,077	1,416	197,521	1,454
Toys	.....	3,041	.....	4,423
Other Articles	.....	920	.....	1,267
Solid Stock (,00 kin)	5,083	504	2,687	298
Camphor (,00 kin)	22,557	2,944	21,431	3,109

Europe Makes Progress With Injection Molding Materials and Methods

By Herbert Chase, M. E.

THAT rapid strides are being made with injection molding in Europe is apparent from the illustrations of these parts which form a part of this article. All of the molded pieces shown have been furnished through F. A. Hughes & Company. Ltd. of London, England, and their subsidiary organization, Cellomold Limited, makers of cellulose acetate molding compounds bearing the same name. These two organizations have collaborated with Francis Shaw & Company, Ltd. of Manchester, England, in the design of special machines for injection molding now manufactured by the latter company. These machines are similar to those manufactured by Eckert & Ziegler, of Cologne, Germany, and both makes are beginning to see extensive use in the two countries named. A few are in use by American and Canadian molders. Francis Shaw & Co. makes machines for injection molding that operate by hand, air or hydraulic pressure, some of which are said to be capable of turning out from 3,000 to 4,000 simple moldings, such as small rods and tubes, per hour, from sixteen-cavity molds. Barrels for pens and pencils, complete with threads, are molded at the rate of 360 an hour.

Resinoid Injection Molding

Injection molding is not confined to cellulose acetate powders, however, nor are special presses required for certain classes of work. In France, as well as in other European countries, considerable injection molding is done with both urea and phenolic materials, some of which are so made that they can be kept in a plastic or semi-liquid state for several hours, or even over night without final setting and curing. In this case the material is first heated on a steam table to 212 deg. F. and then is loaded into an injection cylinder below a hydraulic ram in a more or less conventional vertical press. This cylinder is heated to 60 deg. C. (140 deg. F.). It is fitted with a conical nozzle which is afterward brought into engagement with a mating part of the mold. The mold, previously heated to 212 deg. F. is then filled under a pressure of 4½ to nine tons per sq. in., depending upon the hardness of the material. About 10 seconds is usually required to fill the mold, which, of course, may have many cavities. When filled, the mold is transferred to an ordinary heated press where it is held under a pressure of about 1,000 lb. per sq. in. until curing is completed. The cure requires from 30 to 50 seconds per millimeter of section thickness of the piece, after which the mold is cooled before it is opened and the pieces ejected.

Société La Ronite of France, is the maker of the synthetic resins used in the foregoing process. The phenol-formaldehyde material for injection molding is called Ronisol, and that for the same purpose but made with an urea-formaldehyde base is termed Ronilac. Both materials are made in three grades, soft, medium and hard, and many colors, including some that are translucent, are available. Although the cycle for either type of material is considerably longer than that for cellulose acetate, the rate per piece can be made quite high if multiple-cavity molds are employed. Although data on relative costs is lacking, it is presumed that the materials are less expensive than acetate-base types. Magneto distributors are among the parts produced by this method, hence it is evident that it is adaptable to moldings of considerable size.

Electrical Parts

In Germany, as well as in other countries, cellulose acetate and styrol-base parts, and in particular those made by what the Germans term "die casting", or the equivalent of injection molding as applied to plastics, seem to have assumed special importance in the electrical industry because of the particularly good electrical and physical properties which the injection-molded materials possess. According to one German authority, Dr. F. Pabst of Troisdorf (see the Elektrotechnische Zeitschrift, Sept. 17, 1931) one form of injection-molded styrol-base material, called Trolitul has dielectric properties not possessed even by amber, which is the highest grade of dielectric

The practice of molding by the injection method in Europe is far more widespread than it is in the United States, although a few plants here have been doing very creditable work for more than two years. Most of the European processes involve thermoplastic materials. The principle of injection molding of cellulose acetate was recognized more than a decade ago. Some of the newer developments are recorded in this paper.

Group of injection-molded articles, mostly cellulose acetate. Colors include gray with blue and brown markings, translucent ivory, yellow and green mottling, and black. The brush handle is of red phenolic material.

material. In addition it is pointed out that this material, besides having a high impact strength, is absolutely insensible to atmospheric moisture and does not form a "water skin". Partly for this reason, both its internal and surface resistance are exceedingly high. These characteristics are borne out by the accompanying tables which gives various electrical and other properties, not alone of Trolitul, but of an alternative form of cellulose acetate, Trolite. Because of its low phase loss and low dielectric constant, Trolitul is regarded by Dr. Pabst as being ideal for certain parts required in television work. He indicates that this type of material makes it possible to overcome many difficulties that now stand in the way of progress in the television industries.

Injection Advantages

It is apparent that the cellulose acetate, and styrol plastics referred to especially when employed for making parts by injection methods, are capable of producing some parts that it would be practically impossible to produce in any other way, at the same time giving them properties that probably are not duplicated in any other material. Even parts that appear quite fragile when made by this method are really much stronger than they appear. The starcoil and coil holder here illustrated are examples of this class of article.

Among the most important advantages of injection molding is the fact that the plastic material enters the mold in a fluid state so that every portion of the cavity is filled under hydrostatic pressure, which, of course, is equal in all directions. Inserts are not subjected to the violent surging of a dry powder or to unequal pressures between opposite sides and consequently are not easily bent or displaced as they often are with certain types of pieces and inserts in conventional press molding. For this reason inserts more fragile than are practical with some types of molding can be used when the injection method is employed. It does not follow, however, that all moldings can be made to better advantage by the injection method than by the more usual method in which dry powder or preforms are placed in the mold cavity. No preforming is possible, of course, when the injection method is used.

Injection Molds

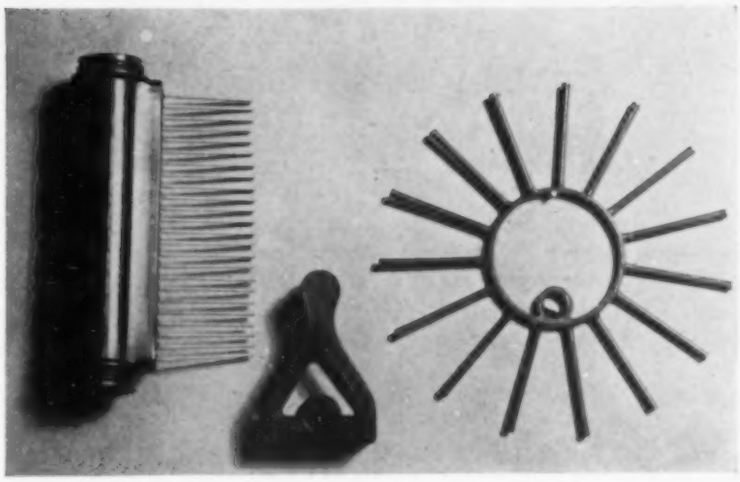
Another advantage of the injection method, especially for short-run work, is that the mold can be made of comparatively soft metal, such as soft steel, bronze or brass, as the abrasive effect of liquid material is almost negligible as compared to that of dry powder. It is not necessary to harden the mold, therefore, and less expensive materials as well as less costly machine work are required. In multiple-cavity molds, separate forces for each cavity are not required, nor is a separate charge in each cavity needed. There is thus less wear and maintenance expense and flash or fins are either less pronounced or non-existent. Unusual streaked color effects are easily obtained by using mixed-color chips or powder, and the passage of the material through the nozzle and connecting channels of the mold produces a mixing effect which makes for homogeneous structure and results in increased strength and elasticity.

Although injection molding is regarded as a comparatively new process, the idea of molding by the injection method of cel-

Physical Properties of Two Compounds Used for Injection Molding

	Trolite (Cellulose acetate)	Trolitul (Styrol)
Specific gravity, about	1.4	1.05
Water absorption after 24-hr. immersion of a piece of 10x15x120 mm, per cent	0.84	0.000
Bending strength, kg. per sq. cm.	550	610
lb. per sq. in.	7,810	8,650
Tensile strength, kg. per sq. cm.	3,692	.....
lb. per sq. in.	260	.....
Impact strength, cm-kg. per sq. cm.	30	17
Heat stability, deg. Martins	500,000	85
Internal resistance, megohms	40	infin.
Surface resistance, megohms	6.0	infin.
Dielectric constant, megohms	300,000	2.5
Phase loss, tan δ	0.03	0.0002
Electrical breakdown strength kV/mm	45	50

lulose esters and ethers is more than a decade old, as several patents were filed by Dr. Arthur Eichengrun as early as 1919. The process has been practiced successfully in England and on the continent for several years. With cellulose acetate, the pressure applied to the injected material is about eight tons per square inch. The material is fed into the injection cylinder, which is usually horizontal, through a hopper. As the cylinder is heated to a temperature of 320 to 390 deg. F., the powder is soon reduced to a plastic mass which is then forced into the closed mold which is often water-cooled. There it solidifies almost immediately and can be ejected as soon as the mold is opened. Since the pressure exerted by the injection cylinder tends to force the mold open if the area of the cavities exceeds that of the injection piston, substantial locking devices are required when this condition exists. These may be a part of the die itself or may be provided for in the machine. In the latter case, die design is materially simplified. If the joint in the mold is perfect and is not opened by the pressure applied, no flash is produced, but a "stalk" or sprue projection filling the channels into the mold cavities forms a part of each piece or set of pieces. The section area of this stalk is usually restricted where it joins the piece so that it is easily broken away, leaving only a very small mark on the piece.



Star-coil holder and support molded from cellulose acetate by the injection process. The "Letrik Comb" is of hollow section and has wire teeth molded in place.

Art In Industry Is Keynote of National Alliance Exposition

THE National Alliance of Art and Industry announces its first national exhibition of three-dimensional objects produced by industry to be shown from June 20 to October 1. This exhibit, the Designer and Industry, will be held at the Art Center Building, 65 East 56th Street, New York City, and will present a complete and comprehensive view of the accomplishments of contemporary American Designers for the machine, —an exhibit that industry has long wished to present to the consumer.

Designers from all over the country will be represented and the merchandise to be displayed ranges from containers and packages to the newest subway turnstile—with a roster of nationally prominent manufacturers as participants. All three-dimensional objects designed for commercial production are eligible for exhibition, with the exception of furniture. The exhibit is broadly divided into two fields.

Table and decorative silver, China, Glass, Pottery and Hardware.

Lighting Fixtures and Lamps.

Bathroom Fixtures.

Household Utensils and Appliances.

Electrical Household Appliances.

Clocks, Watches and Thermometers.

Decorative Metalwork.

Decorative Accessories in all materials.

Pianos, Radio Cabinets and Victrolas.

Objects of General Commercial Usage

Automobile and Building Hardware.

Scales.

Containers and Packages in all Materials.

Cameras.

Typewriters.

Special Appliances, Acousticons, Optical Goods, etc.

Special Electrical Appliances.

Tools.

Special Office or Factory Furnishings.

Luggage and Leather Goods.

Architectural Material.

New Material.

Awards

Awards will be made for utility and beauty in a number of classes. These awards are to be made in a most interesting and unique manner. The group who will make these awards is made up of five hundred carefully chosen representatives of consumer interest, numbering directors of institutions and organizations interested in design and heads of departments and industrial firms actively concerned with design and construction.

In conjunction with this exhibit the American Management Association is co-operating with the National Alliance of Art and Industry in a series of lecture conferences on the Economic Importance of Re-Designing, which are to be held on the evenings of June 28th and 29th.

Trade and Technical Research Features Last Molders Meeting

THE April 15th meeting of the Molded Insulation Section of NEMA was held at the Hotel Commodore in New York City. Twenty-four men, representing fourteen member companies, and three guests were present. Committee meetings were held in the morning and the committee reports were submitted to the full section meeting in the afternoon.

The Membership Committee, G. C. Wilson chairman, reported that conversations were going on with a number of prospects and that progress was being made. It was hoped that a number of additions would soon be made to the roster of member companies.

Join NEMA Group on Heater Cord Set Study

The Molded Insulation Section was invited to send a representative to the newly formed Joint Section Committee. This committee will consider the subject of heater cord sets, the assembly of a length of heater cord, an attachment plug cap and an appliance plug, with a view to suggesting improvements in durability, serviceability and general mechanical strength. Other NEMA affiliates which will participate in this study are the Attachment Plug Section, Flexible Cord Group, Heating Appliance Section and Snap Switch Section. The first meeting was held during the week of May 9th. Mr. G. K. Scribner was appointed the Molded Insulation Section's representative because of the inability of Mr. F. H. Shaw, chairman of the Technical Committee, to serve due to illness.

Because of the close parallel of interest, the Trade Research and Trade Practises Committees were merged. Mr. H. D. Randall will hereafter act as chairman of the new Trade Practises and Research Committee. He suggested that the Section consider a standard brown color for molded parts in wiring devices. It was so moved and then referred to the Technical Committee for further study. Mr. Aumend contributed Bureau of Standards data, that was collected for the refrigerator industry, as an aid in this investigation. Mr. Randall reported that he was advised by Mr. FitzGerald, general freight counsel of NEMA, that there was little possibility of any change in I. C. C. rates on finished articles but that there was a possibility of relief on rates for compounds. The Trade Practises and Research Committee also undertook to study the possibility of the Section's participation in the Chicago Century of Progress Fair in 1933.

Member companies and representatives present were: American Insulator Corp., P. Huidekoper; American Record Corp., J. P. Case, R. H. Allen; Auburn Button Works, D. Woodruff, W. A. Freyer; Boonton Molding Co., G. K. Scribner, C. J. Groos; Boonton Rubber Mfg. Co., R. W. Post, P. C. Goodspeed; Bryant Electric Co., R. H. Cunningham; Chicago Molded Products Corp., E. F. Bachner; Diemolding Corp., D. Dew; General Electric Co., H. D. Randall, R. E. Coleman.

Also Kuhn & Jacob Molding & Tool Co., Geo. Kuhn; Niagara Insul-Bake Spec. Co., K. C. Ogden; Northern Industrial Chemical Co., H. H. Wanders; Norton Laboratories, G. C. Wilson; Reynolds Spring Co., J. G. Rossiter, R. A. Austin. Others present were D. S. Kendall, Mack Molding Co.; E. S. Aumend, NEMA; R. C. Gilmore, Jr., N. Klein, Plastics Publications, Inc.

The Section will hold its next meeting at the General Brock Hotel, Niagara Falls, Ont., July 15 and 16.

New York Molder Representatives Organize Luncheon-Talk Series

FOR the past three months, the New York representatives of the various molding companies have been meeting informally at luncheon once a month at the Machinery Club Restaurant. The purpose of the meetings is merely social and educational. The social amenities are observed before and during the luncheon and the educational features consist of talks on various aspects of the industry. The group is entirely without formal organization; Mr. C. J. Groos, of the Boonton Molding Company, sponsor of the meetings, being temporary acting chairman.

Slaughter Speaks

Meetings are held regularly on the first Wednesday of each month. The first was held on March 2nd at which eighteen men representing fourteen companies were present. No speaker had been invited to this first gathering; the purposes being outlined. The second meeting was held on April 6th when Mr. C. E. Slaughter of the Unyte Corporation discussed the characteristics of that new material. Twenty-three men representing eighteen companies were present.

The third monthly luncheon was held on May 5th at which Mr. D. E. A. Charlton, Editor of *Modern Packaging* was the speaker, on the subject of "New Uses for Plastics—How and Where to Sell Them." The talk was confined almost entirely to possible developments of the packaging field and the effect introduction of pastel colors had

(*Continued on page 250*)

Made of "Beetle"
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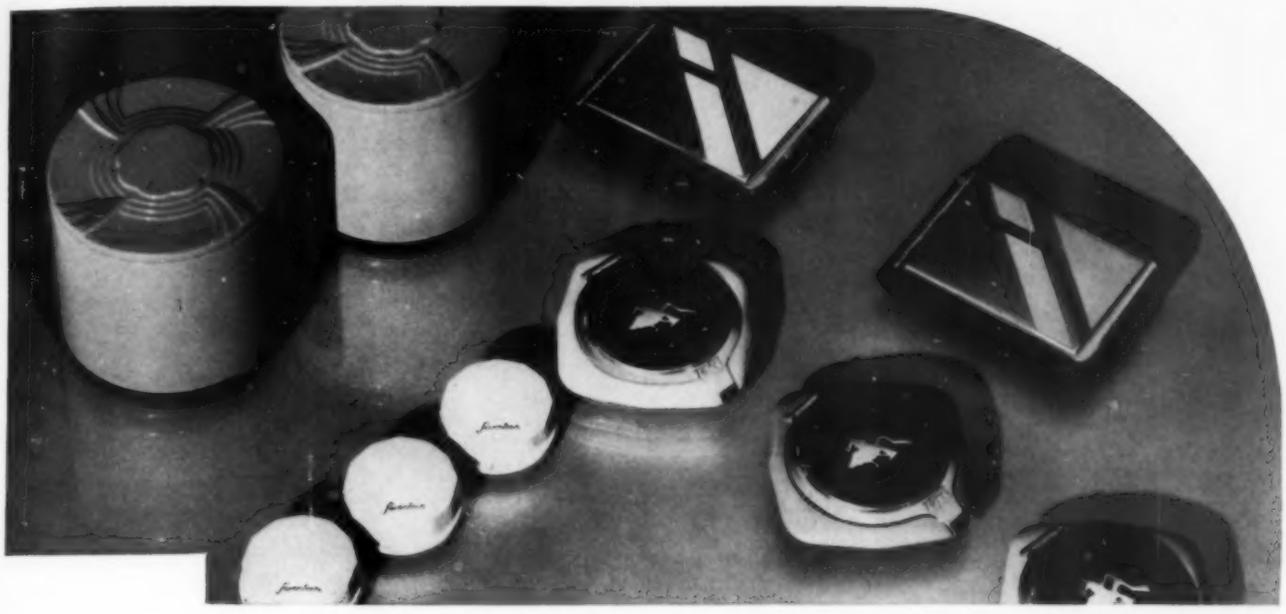

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We will be glad to supply you with complete information, color samples and specimens of recent "Beetle" moldings.

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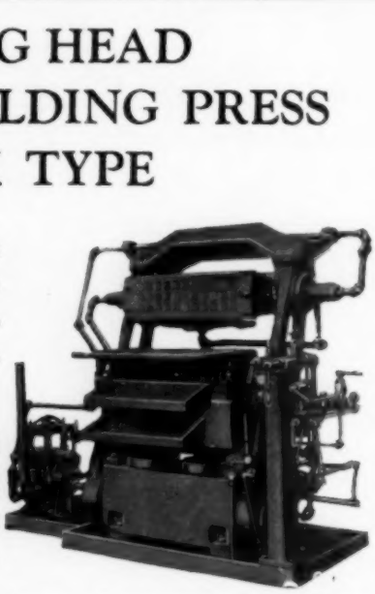

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Plastics Publications, Inc.
114 East 32nd Street
New York, N. Y.

Pyraheel---Made by Men for Women

Introducing a new heel covering material that will not scuff—Synthetic plastics add another aid to the shoe industry

By Reggie Ellis

Du Pont Viscoloid Co.

The moire and snakeskin effects are but two of the finishes available in the new du Pont Pyraheel material. Leathers and fabrics can be simulated as to color and finish with the added advantage of being waterproof, color-fast and scuff-proof.

DU PONT presents Pyraheel —a new heel covering that will not scuff and that matches shoe material in color, texture, pattern and design. For years shoe manufacturers have used du Pont Pyralin Patent Leather Black for this purpose, but now embossed Pyralin simulating calfskin, kid, reptile and cloth effects has been developed with the same exacting care given to every other du Pont product.

Shoes, like every other article made for women, are constantly in a maelstrom of style changes. Every year finds new models, new styles introduced, and immediately the fastidious women make their choice from the offerings, and the vogue is set.

Shoe heels are subjected to the hardest wear. Daily, in the subway, walking, dancing, driving, in the office they are cut, scraped, scratched and marred —and how unsightly they look!

The shoe manufacturer may either cut his covers from embossed sheets or emboss a design with this hand press.

Women demand beauty in shoes—beauty of the enduring kind. And this calls for materials that will withstand the hard wear of modern life. They must be easy to clean—free from scuffs and scratches—especially the heels, which suffer most abuse. No ordinary materials have combined toughness with enduring beauty in a degree to give women what they demand, so makers of shoes were quick to realize the advantages of du Pont Pyraheel, and they are using considerable quantities of this new, durable material in their factories.

Shoe manufacturers can now buy Pyralin sheets in twenty-by fifty-inch lengths already embossed in the desired texture, pattern or color, or they can buy unembossed sheets in various colors, and emboss the individual heel covers themselves with a simple hand-operated machine. The one pictured on this page is being generally used throughout the trade by those who prefer this procedure.

Let us assume that an operator is about to do some embossing. First, he takes an unembossed sheet and blanks out approximately eighty covers from it. Next, these are placed in a softening solution to bring the Pyralin back to its plastic form. This takes about twenty minutes and then the covers are ready to be embossed. The operator lifts up the handle of the press and inserts the piece of Pyralin between a rubber mat and a steel plate that has been etched to give one of the finishes previously mentioned. The handle of the press is pulled down and pressure is exerted for about three minutes, whereupon the cover is removed, given a coat of cement, and immediately applied to the wood heel form. The new embossed cover is carefully stretched over it and the operation is complete.

The Shift from Black

For a number of years black patent leather shoes for women were outstandingly popular. In making them lustrous black Pyralin sheeting was found to be suitable for covering the heels. It matched the leather uppers perfectly. Later, when the demand arose for footwear in colors, grains and imitative effects, it became necessary to duplicate these distinctive materials in Pyralin for heel covers. Embossing processes have solved that, with the result that manufacturers are today producing shoes of greater beauty, utility and variety than ever before.

Revolutionary? Yes. Just think, now every pair of shoes requiring covered heels can have the beauty of Pyralin and its resistance to wear! A simple, inexpensive embossing proc-

(Continued on page 249)

*Reprinted from Du Pont Magazine.

NEWS *of the* INDUSTRY

Tariff Commission Postpones Laminated Hearing

THE Tariff Commission announces that in compliance with the request of parties interested, the public hearing heretofore set in the investigation of resinoid, laminated sheets or plates to be held on June 7, 1932, is hereby postponed to a date to be later announced.

German I. G. Develops Synthetic Tragacanth

A SYNTHETIC substitute for gum tragacanth has been brought out by the I. G. Farbenindustrie, according to Consul-General W. L. Lowie, Frankfort-on-Main, Germany under the name of "Tylose S". This preparation is manufactured from a water soluble methyl cellulose. It dissolves in boiling water into a gelatinous product similar to a tragacanth solution which is neutral, stable to alkalies and unaffected by the atmosphere and light. It is used as a binder and emulsifier for oils, fats, waxes, finely divided pigments, clay and graphite. It is adapted particularly to the preparation of shoe polishes, pencils and plastics.

"Tylose S" is stated to offer special advantages over other gums by being resistant to fermentation, having little tendency to souring or molding, and being re-soluble after coagulation by heat.

Pyroxylin Output Declines Slightly

UNITED STATES production of pyroxylin sheets and rods during the first quarter of 1932 was slightly below the corresponding level of 1931. Pyroxylin in tubes, however, increased from 123,799 pounds in the first three months of 1931 to 169,689 pounds in the 1932 quarter. Production of pyroxylin in sheets in the 1932 three-month period was 3,049,054 pounds, and in rods 436,865 pounds compared to 3,092,143 pounds and 520,303 pounds respectively in January-March, 1931.

Natural Camphor Imports Gain —Synthetic Lower

IMPORTS of natural crude camphor into the United States increased from 220,900 pounds valued at $84,300 during the first quarter of 1931 to 609,800 pounds valued at $186,200 in the corresponding period this year. Imports of natural refined camphor gained from 263,700 pounds worth $127,300 to 531,300 pounds valued at $201,000 in the aforementioned periods respectively. Synthetic camphor suffered a drop from 616,500 pounds worth $205,500 to 500,200 pounds valued at $135,500.

Whitaker Vice President of American Cyanide Co.

DR. Milton C. Whitaker, formerly Vice-President of the U. S. Industrial Alcohol Company, has been elected a member of the Board of Directors of the American Cyanamid Company, filling the vacancy on the Board caused by the recent death of Mr. J. M. Selden. At the organization meeting of the Board on April 26th Dr. Whitaker was appointed a Vice-President of the Company.

Since joining the American Cyanamid Company in 1930 Dr. Whitaker has devoted his attention to technical and research problems of the Company and its subsidiaries.

Swann Corp. Outlines Sales Expansion Policy

AS the result of a comprehensive business survey covering a large part of the United States, new sales offices are being opened in five of the large centers and sales representatives are being placed in ten other cities by The Swann Corporation, manufacturers of chemicals, according to a statement made recently by Theodore Swann, president of the corporation.

"We are convinced that this is a favorable time to expand our business", said Mr. Swann. "In consequence, we are increasing our sales forces by more than fifty per cent, and, in addition to our present offices in Birmingham, St. Louis, Cincinnati and New York, we are opening new offices in Boston, Baltimore, Pittsburgh, Charlotte and Dallas. We are also placing sales representatives in Albany, Harrisburg, Camden, Cleveland, Louisville, Knoxville, Memphis, Atlanta, Jacksonville, and New Orleans. The Baltimore and Charlotte offices are being opened immediately and all the other arrangements will be completed before the end of May.

"This move is not based upon mere guess work or hopes", continued Mr. Swann, "but upon facts. Nine months ago we decided to secure more data than we possessed about our possible markets and so began a very thorough survey to determine the requirements of all kinds of chemical users. We sent representatives into various states and they made a complete canvass, calling upon every consumer of chemicals from the largest of industries to the smallest of automobile service stations.

"This work is still in progress, but the information that we have so far secured has enabled us to increase our business month by month and assures us of the soundness of an aggressive policy of expansion.

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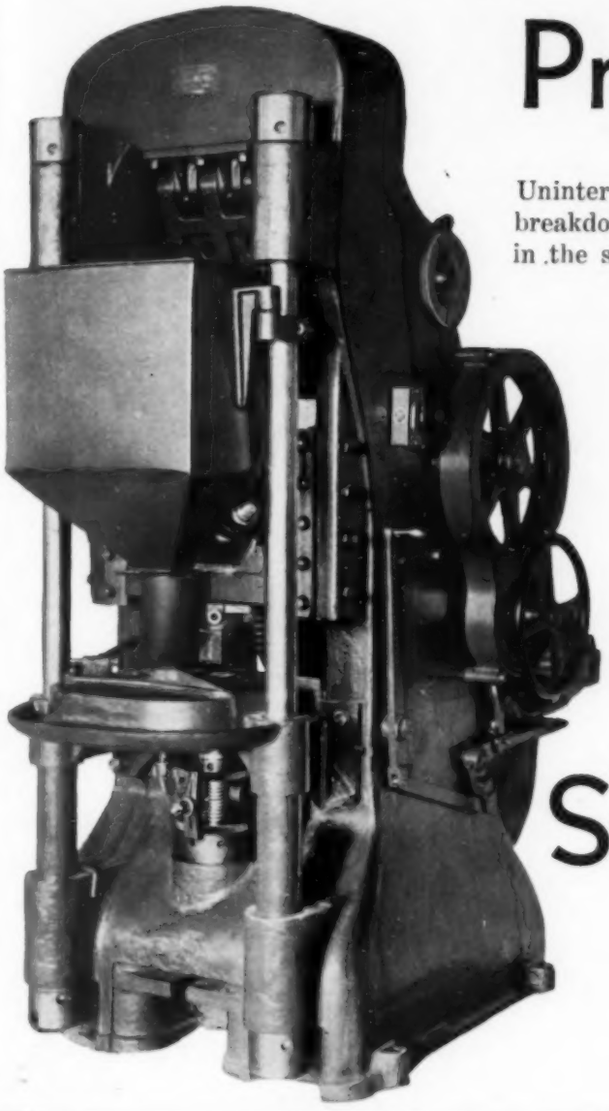

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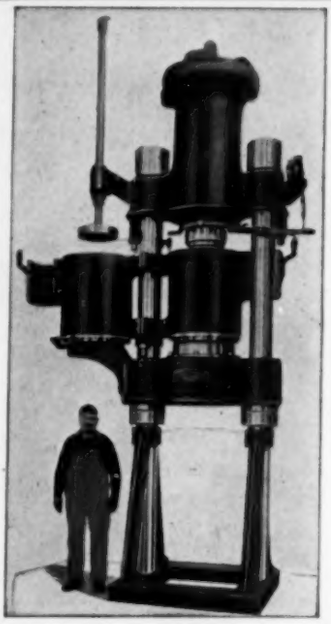

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More Light on Pearl Essence Patents

Decision Upholds One Paisseau Patent, Invalidates Another

THE latest in the series of patent infringement suits, both here and abroad, tends to further clarify the pearl essence situation. In a decision rendered May 2, 1932, by Judge Peters in U. S. District Court, District of Maine (Southern Division) in the case of Paispearl Products Inc. v. Joseph H. Meyer Bros. et. al., Jean Paisseau's patent Number 1,525,315, granted February 3, 1925, was held valid and infringed by the defendant while Paisseau's patent number 1,760,771, granted May 27, 1930, also owned by the plaintiff Paispearl, was declared invalid as claimed by the defendant. The plaintiff was allowed an accounting and damages, but not treble damages, as claimed for a wanton infringement.

Use of Detersives

The invention, in the first patent, lies in the substitution of soap or saponine for other materials previously used in separating the crystals of guanin from the fish membrane. The question of infringement of this patent rested upon the alleged use by Meyer of various soaps in its plant at Eastport, Me. Meyer's contention was that their use of these materials was experimental only in the course of their search for a new agent which they claim to have developed. It was shown, however, that during this experimental work, some two hundred pounds of saponine were used and that the resulting pearl essence, or the principal part, was afterwards sold by Meyer through the usual channels, to the damage of Paispearl.

After August 5th, 1931, J. H. Meyer Bros. used a new material of their own called "Tec", in the production of pearl essence. Thus the question of infringement of the Paisseau patent after this date depended upon whether "Tec" was an agent of the patent. At the trial, Meyer elected to keep the nature and composition of this new material a secret after being warned that it must accept the consequences. Meyer claimed that the evidence showed that "Tec" was neither physically nor chemically the equivalent of soap or saponine. The plaintiff's claim that "Tec" possessed the detersive properties of soap or saponine and produced the same effect in the process prompted the court to find a prima facie case of infringement subsequent to Aug. 5th, 1931, especially in light of the fact that no evidence was introduced to show that "Tec" differed from soap or saponine. The patent was held valid and infringed.

The second patent, number 1,760,771, relates to a process for further purifying the pearl essence as produced by the method in the first patent. The substance of this is the removal of the water from the aqueous pearl essence paste by the addition of a solvent or varnish, immiscible with water. Meyer claimed that this patent is invalid because the method was completely anticipated and previously described by Mr. Taylor of the U. S. Bureau of Fisheries in 1920. The court upheld this contention of the defendant, as supported by the record and exhibits.

The issuance of an injunction against the continuance of said infringement has been stayed pending an appeal filed by the defendants, Joseph H. Meyer Brothers et al, and bond of $25,000 has been required to be posted to protect Paispearl Products, Inc. during the pendency of the appeal. This sum was fixed on the basis of a production of 5,000 pounds of pearl essence by the defendents during the appeal. The defendants have been requird to file monthly statements of production so that steps may be taken to increase the bond should it become necessary to do so to protect Paispearl Products, Inc.

Pyraheel--A New Pyralin Product

(*Continued from page 245*)

ess makes the new grained Pyralin available to every manufacturer. Using a single plate, any number of covers can be embossed in the finish desired. It's just as simple as that—du Pont supplies the machine, the plates, and Pyralin in sheet form. The manufacturer embosses the blanks for the texture of the shoe material he happens to be using, and applies the covers to as many shoes as he wants. Also, as stated before, full-size sheets may be obtained already embossed in the desired texture or grain.

This unprotected Pyralin-covered heel went through the mails from New York to San Francisco and back without being scratched.

Pyralin is an unusually tough substance. Shoe heels covered with it will stand the roughest kind of treatment without revealing evidences of injury. You can strike a Pyraheel violently against the edge of a desk or table and no mark will show. Draw the heel across a sharp edge and there will be no scratch. The colors do not fade

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or run. Dirt can be wiped off with a damp cloth.

Before introducing this product, exhaustive tests for months were made in laboratories to be sure that Pyraheel was good enough to bear the du Pont name. One of the accompanying illustrations shows a Pyralin-covered heel after it had made a journey, without any protection in the mails, from New York to San Francisco and back. It came through that ordeal without a single scuff mark or scratch. All of which indicates that Pyraheel material can be exposed to rough treatment and that it will come through unharmed.

Leading shoe manufacturers have subjected Pyraheel to tests of their own. They have tried and approved the process of embossing and applying this material and have adopted it for every grade of shoe from the cheapest to the most expensive. They know that finished products of this kind will be welcomed by the trade and by women who no longer need to worry about scuffed, scratched and torn heels. Now they can forget such misfortunes. The woman who formerly drove the family automobile with the lurking fear of ruining her shoes on hard clutch and brake pedals can now enjoy real peace of mind.

New Stokes Catalog

F. J. Stokes Machine Co., Philadelphia, manufacturers of pharmaceutical machinery, and preforming presses for plastic molding, have ready for distribution a new catalog describing their complete line of tablet making equipment.

N. Y. Representatives Meet

(*Continued from page 242*)

on the molding industry, particularly in the field of packaging. Samples of various molded packages were exhibited to bring out the particular points in the talk. From the questions asked Mr. Charlton at the close of the talk, it seemed that the salesmen will

more seriously consider the plastic possibilities in the field of packaging.

Among those present at the various meetings, and their companies, were:—Allen & Hills, Inc., E. A. Muller; Colt's Patent Fire Arms Mfg. Co., J. G. Spach; Diemolding Corporation, Frank J. Boller; Niagara Insul-Bake Specialty Co., Mr. Ogden; Accurate Molding Corp., Mr. Adenbaum; Boonton Molding Co., C. J. Groos, V. F. Harkness; Auburn Button Works, L. C. Hengst, B. A. Appleton: Norton Laboratories, Mr. Hall; Waterbury Button Co., C. B. Wilson; Insulation Mfg. Co., C. W. Hancock; American Insulator Corp., H. D. Broumel.

American Record Corp., A. F. Wiseburn, L. Gray, Mr. Raymond; General Electric Co., E. W. Beeman, R. S. Fulton, Mr. Falk; Chicago Molded Products Corp., W. J. Buedingen; Shaw Insulator Co., L. K. Detwiler, F. C. Ryder; Boonton Rubber Mfg. Co., P. G. Goodspeed; Kuhn & Jacobs Moulding & Tool Co., H. L. Amdury; Watertown Mfg. Co., E. M. Robb; Union Insulating Co., L. E. Ladd, J. H. Parker; Imperial Molded Products Co., J. J. Risch; Molded Plastics, Inc., G. D. Snyder; Mack Molding Co., D. O. Friend.

Our Homesick Plastics

(*Continued from page 236*)

the "fine" arts of the past, and has grasped the purpose and feeling of the new age. Traditional and eclectic forms have little place in his studio, and his pencil speaks a new functional language—a language of geometry, spheres, cubes, cones, squares, triangles—forms that have a machine-age meaning. Applied ornament has also been tossed from his skyscraper window, for it has no place in the mechanical age, and is a confession of inability to design objects beautiful in themselves. He is a distinctly new type of creature — a combination of salesman, showman, sculptor, engineer. If the eternal dupli-

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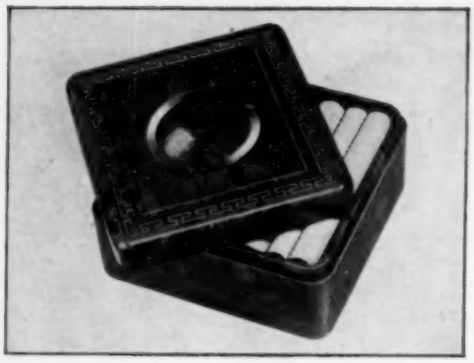

This cigarette box, molded of mottled A-R-C-Phenolic, is typical of the striking beauty and originality of modern A-R-C molding. Marbelized effect adds to its attractiveness, durability enhances its value, economy increases its worth. A-R-C-Phenolic, plain or mottled, can be economically adapted to any product th: adapts itself to molding!

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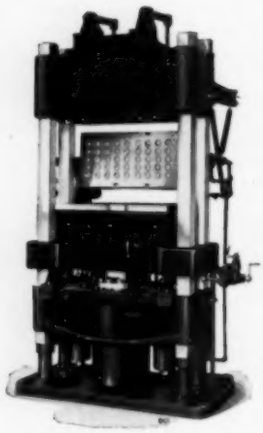

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cation and re-duplication of our mass-production age can ever be reconciled with our fundamental yearnings for beauty, he alone can do it.

How to get this man working for us is a problem. Few of us can deny that there is a great need for better design in plastics. The responsibility for better design rests on the shoulders of American Industry-at-large, but before this responsibility is recognized, mediocre design can do and is doing our craft irreparable harm.

Ultimate Value

Obviously, then, the gospel of trained design should be spread by every fabricator of basic material in the country, and particularly by fabricators of plastics, for due to their very plasticity these materials can suffer most from amateur design. If we cannot yet buy trained design service—and it costs money—we must bend every effort to sell it to Industry. We must become design-salesmen as well as fabricators. We must realize that a fee of a few hundred dollars for a good product design is negligible in comparison to added sales which it can produce. We must not feel it is outside of our sphere to sell and urge trained design to our customers, when we know it is for their good as well as ours. We must point out actual cases, tactfully and earnestly, where for instance, a new package design increased Devoe & Reynolds' "Clean-all" cleaner sales 800%, a new Taylor instrument design increased sales 65%, or a new Big Ben clock-case design is given credit for a third of the remarkable sales jump. These manufacturers are far from regretting the few hundred dollars spent in preparing their products for the market. Records such as these are being made daily, and a militantly design-conscious plastics industry can do much to further the cause of better product design. For our own good, we must stop our non-aggressive buck-passing.

Sheet Pyroxylin In Soundproof and Heat-Insulating Glass

A broadcasting studio is a typical installation in which a transparent, sound-proof sheet, such as described in this patent, might be desirable. The patent, No. 1,848,190, was issued March 8th, 1932 to Willard L. Morgan, assignor to Libbey-Owens-Ford Glass Company.

THE present invention relates to laminated glass structures and embodies, more specifically, a laminated or composite glass having the properties of being highly sound proof and heat insulating.

The invention further relates to sound proof structures consisting of composite glass wherein a plurality of laminations of glass are provided, between certain of which laminations air cells or pockets are formed. The sound resisting, as well as heat insulating character of these air pockets will be readily appreciated as the invention is described in further detail hereinafter and the wide use to which these composite glass structures may be put will partially be revealed as the invention is further described.

An object of the invention, accordingly, is to provide a composite glass structure in which is incorporated means to provide heat insulating as well as sound proof characteristics.

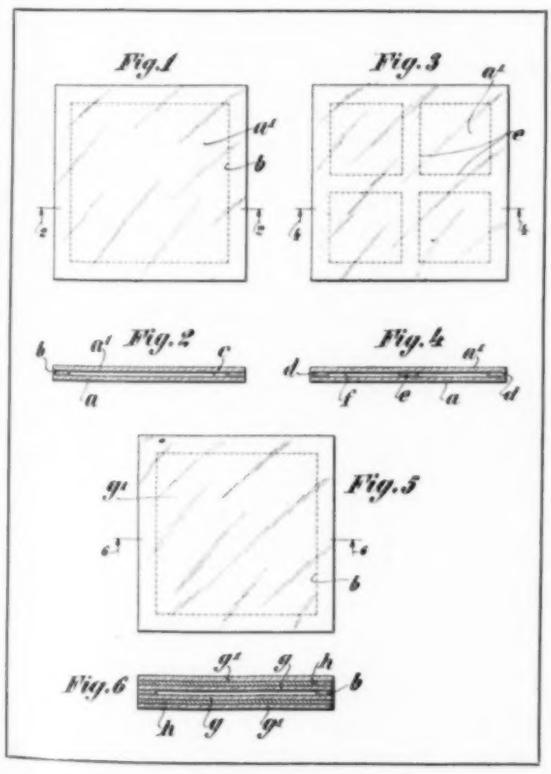
Figure 1 is a plan view of a composite glass structure constructed in accordance with the present invention. Figure 2 is a view in section, taken on line 2—2 of Figure 1, and looking in the direction of the arrows.

Figure 3 is a plan view of a modified form of the invention, the composite glass structure embodying a plurality of air pockets between the laminations thereof. Figure 4 is a view in section taken on line 4—4 of Figure 3 and looking in the direction of the arrows.

Figure 5 is a plan view showing a composite glass structure of a further modified form, this form embodying an air pocket between each of a plurality of laminated sections. Figure 6 is a view in section, taken on line 6—6 of Figure 5, and looking in the direction of the arrows.

Referring to the above drawings, particularly to the structure shown in Figures 1 and 2, a composite glass structure is shown as formed of two glass laminations a and a', in the form shown these laminations being formed of rectangular glass plates.

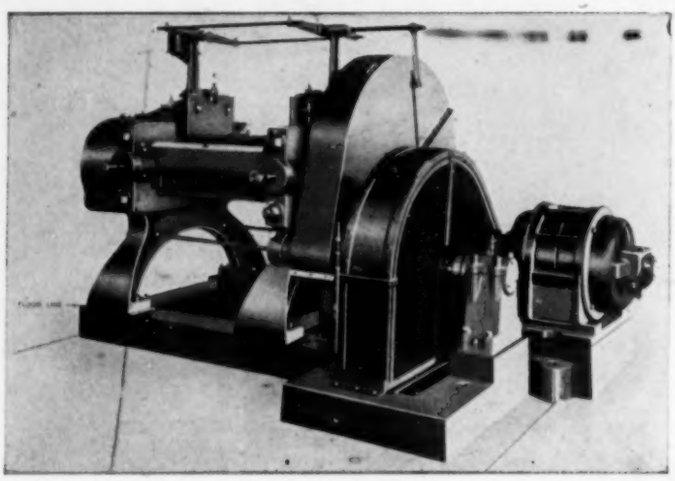
Between these plates and adjacent the perimeters thereof, is a spacing member b which is preferably formed by stenciling from a sheet of celluloid, thus forming a hollow pocket c between the plates a and a', the extremities of which are defined by the celluloid stencil b.



As the illustration indicates, the composite sheet may be built with a single air pocket between the glass sheets, as in Fig. 1, or with a number of air pockets as in Fig. 3. The spacing members, b and d in the section drawings Figs. 2 and 4, are pyroxylin sheet material. Fig. 5 is another variation of the invention.

Method of Cementing

It is preferred that the glass be coated with gelatine, preferably by spraying, a protecting metal stencil being placed on the glass to prevent the gelatine coating from being applied to the surface of the glass against which the celluloid stencil is not applied. The celluloid is stenciled out to the desired shape, that is, of the outline of the gelatine coating on the glass and is lightly sprayed with known solvents to soften the surface thereof. The celluloid is then placed between two similarly formed glass plates and



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heat and pressure applied thereto. In applying pressure to these elements great care is exercised to prevent pressure from being applied to any portion of the glass plates under which there is no celluloid.

Stencils

It has been found that cardboard stencils or other forms of padding are quite effective in this respect, being placed over the plates to overlie the celluloid stencils. Care must be exercised to form the cardboard or padding stencils in exact conformity to the celluloid stencil inasmuch as pressure on the glass over the area of the pocket frequently causes breakage. Accuracy in the formation of the padding stencils is very necessary inasmuch as it results in securing the laminations of glass to the celluloid at the edges thereof.

If desired, a partial vacuum may be formed within the pocket by laying the unbonded sandwich of elements above described on a warm surface such as a press platen, removing the top glass and inserting a small quality of a volatile celluloid solvent, such as acetone. This is placed in the center of the sandwich on the lower glass and the upper glass is then applied, leaving a small aperture to permit vapors to escape. The solvent evaporates under the influence of the heat and carries the air out with it from between the glass plates. In a short time the upper glass may be slid over the celluloid into its proper position for lamination, thus shutting off the interior which is filled with the vapor of the solvent. The sandwich is then placed in a heated press and the lamination secured between the elements by the use of heat and pressure, care being exercised to use stenciled paddings, as already described, in order to prevent breakage. Upon cooling the glass, after pressing, this solvent vapor condenses to liquid and thus produces a partial vacuum which is

slowly increased by the fact that the solvent is absorbed by the side walls of the celluloid.

In the construction shown in Figures 3 and 4, plates a and a¹, are shown as being spaced by a celluloid stencil d, the outer portion of which is similar to the stencil b, but having intersecting portions e. These portions form a plurality of air pockets f, the composite structure being formed in a manner similar to that described in connection with the device shown in Figures 1 and 2. In certain instances, for example, refrigerator doors, etc., it is desirable to provide a composite structure of great strength. For that purpose, the composite structure of Figures 1 and 2 is modified by substituting composite plates for the plates a and a¹, the stencil b being similar to that of Figures 1 and 2. These composite plates are formed of inner and outer plates g and g¹, respectively, layers of celluloid h securing the plates together in a well known fashion.

While the structures shown in Figures 1, 2, 3, and 4 are not shock proof in the sense that they cannot be broken, the cementing of the two panes of glass by border strips in the manner described above, produces a structure which is abnormally resistant to shocks. Furthermore, unless a very severe blow is received by the structure, the larger fragments remain held in position by the celluloid.

Claims

One of three claims follows:

1. The method of forming a composite glass structure comprising applying a celluloid stencil to a glass plate, placing a quantity of a volatile celluloid solvent upon the plate within the stencil, applying a second glass plate over the stencil, permitting the vapors to escape, completely closing the space defined by the stencil, and securing the second plate to the stencil.

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TECHNICAL ABSTRACT SECTION

A Review of Literature and Patents

Alkyd Resinous Products and Process of Making. Ernest J. Pieper, assignor to Armstrong Cork Co., of Lancaster, Pa. U. S. P. 1,847,783; March 1, 1932.

Example

35 parts ethylene glycol; 3½ to 7½ parts di-ethylene glycol; 8 to 13 parts glycerine; 105 parts phthalic anhydride and 10 to 20 parts drying oil acids, such as the acids obtained from linseed oil; Chinawood oil, etc.

This mixture is heated to about 180° to 230° centigrade until the constituents combine and condense to form the resin in its soluble form. The materials are preferably all added together in a heating vessel at one time and the temperature raised fairly rapidly to about 180° centigrade and maintained until the reaction begins. There is some tendency to foam due to the liberation of water and gases. After the reaction has proceeded for some time the temperature may be carried up to about 220° to 230° centigrade until a homogeneous condensation product is obtained. The reaction is carried to a point just under the gelation point, which point I regard as being the time at which a violent reaction sets in and the resinous material would stew up and froth over.

The resin thus produced is then dissolved in a solvent to form a lacquer or paint. The lacquer or paint gives a film which will air-dry to an alkali and soap resistant condition and which has a high flexibility and toughness.

Decorated Material. Amerigo F. Caprio, assignor to Celluloid Corp. U. S. P. 1,848,158; March 8, 1932.

Composition of matter containing oxanilide and having a lustrous appearance.

Composition of matter comprising a pearl-like material containing lustrous particles of oxanilide.

Composition of matter possessing thermoplastic properties, containing oxanilide, and having a lustrous appearance.

Composition of matter containing a thermoplastic cellulose derivative, and oxanilide, and having a lustrous appearance.

Process of Preparing Artificial Coating Materials. Hans Persiel, assignor to I. G. Farbenindustrie, of Frankfort-on-the-Main, Germany. U. S. P. 1,848,268; March 8, 1932.

Process of preparing artificial materials and coatings of all kinds, which consists in finely dispersing with water nitrocellulose in the presence of a water-soluble cellulose ether and then treating the dispersion after bringing it into a desired shape with an agent which is capable of causing the nitro cellulose to swell.

Process of preparing artificial materials and coatings of all kinds, which consists in finely dispersing nitro-cellulose in the presence of methyl cellulose and then treating the dispersion after bringing it into a desired shape with a solvent which causes the nitro cellulose to swell.

The process of preparing artificial materials and coatings of all kinds, which consists in finely dispersing with water a binding agent which is insoluble in water in the presence of a water-soluble cellulose ether, and then treating the dispersion after bringing it into a desired shape with an agent which is capable of causing the binding agent to swell.

Noncurling Floor Covering. Carleton Ellis, assignor to Rezyl Corporation, of New York, N. Y. U. S. P. 1,848,329; March 8, 1932.

A procedure illustrative of the present invention is made by dissolving 80 parts by weight of cellulose acetate (about 15 second viscosity material) in 75 parts of triacetin, 30 parts acetone and 25 parts of alkali-condensed acetone. 2 to 4 parts of ceresin wax are dissolved in 50 parts ethylene dichloride and this solution mixed with the solution of cellulose acetate. 72 parts of ground cork, 32 parts lithopone and 30 parts of whiting are mixed and added to the foregoing solution. The composition then is masticated until smoothly plastic. It is then sheeted onto asphalt-saturated felt base by means of sheeting rolls.

The sheeted material is dried at 70-75° C. for a short space of time, the volatile solvents being recovered if desired.

Washable Wall Paper. Edward F. Arnold, of New Brunswick, New Jersey, assignor to E. I. Du Pont De Nemours & Company, of Wilmington, Delaware, a Corporation of Delaware. U. S. P. 1,848,686; March 8, 1932.

A washable wall covering comprising a fibrous base, and superposed thereon a surface coating comprising a cellulose compound and a material from the group consisting of waxes and metal stearates, the character and proportion of the ingredients of the coating being such as to give an invisible, matte, washable surface film.

Coating Composition

	Parts by Weight
High viscosity nitrocellulose	6.5
Dibutyl phthalate	6.0
Aluminum stearate	4.1
Carnauba wax	3.0
Denatured alcohol	3.5
Ethyl acetate	20.4
Toluol	16.7
Gasoline	23.2
Butyl acetate	14.7
Pentasol	1.9
	100.0

Synthetic Resin Coating Materials. John M. Taylor, of Bridgeport, Pa., assignor to Continental-Diamond Fibre Company of Newark, Del. U. S. P. 1,848,913; March 8, 1932.

A coating material comprising a drying oil and a finely divided hardened synthetic resin.

As a new article of manufacture, a varnish composition in a condition of fluidity rendering it suitable for painting purposes having incorporated therein a finely divided synthetic resin in its final infusible, insoluble stage.

As a new article of manufacture, a varnish composition having incorporated therein as its only synthetic-resin constituent a finely divided synthetic resin in its final infusible, insoluble stage.

Lactic Acid Resin. William Henry Moss, assignor to Celanese Corporation of America. U. S. P. 1,849,107; March 15, 1932.

A water resistant resin formed by heating lactic acid as the sole reactant, until polymerization occurs and a resin produced.

A resin formed by heating lactic acid as the sole reactant under a reflux for a period of time.

A resin formed by heating lactic acid under a reflux for a period of time, said resin having a light color and a melting point of between about 30° and 35° C.

Method of preparing a resin comprising heating lactic acid as the sole reactant under reflux.

Resorcin Resin. Emil E. Novotny, assignor to ohn Stogdell Stokes, of Spring Valley Farms, Pa. U. S. P. 1,849,109; May 15, 1932.

The process of making a solid, potentially reactive composition comprising heating resorcin with less than a molecular proportion of an active methylene body to a temperature at which an exothermic reaction occurs and then, after the initial exothermic reaction has subsided, further heating the product until a hard but still fusible, resinous reaction product is secured and adding thereto a further quantity of an active methylene body to act as a hardening agent for said resinous reaction product.

Preparation of Vinyl Acetate. Harry B. Dykstra, assignor to E. I. Du Pont De Nemours & Co., of Wilmington, Del. U. S. P. 1,849,616; March 15, 1932.

Example

Acetylene was introduced with stirring into a mixture of 600 g. glacial acetic acid. 43 g. finely divided mercuric sulfate, 30 g. sulfoacetic acid, and 30 g. acetic anhydride maintained at 5-15° C at such a rate that absorption was complete. The addition of acetylene was continued for six hours, resulting in a

gain in weight of 188 g. Fifty grams of anhydrous sodium acetate was added to the reaction product and the whole distilled under diminished pressure. The distillate was fractionally distilled at atmospheric pressure giving 349 g. vinyl acetate (b. p. 72-76° C.), 195 g. acetic acid (b. p. 115-125° C.), and 64 g. ethylidene diacetate (b. p. 160-170° C.). This is equivalent to yields of 60 per cent vinyl acetate and 13 per cent ethylidene diacetate, based on the acetic acid consumed. When omitting the step involving the addition of sodium acetate, the yields of both vinyl acetate and ethylidene diacetate were markedly reduced, acetaldehyde was liberated, and tarry products were formed.

Glycerol-Phthalate Resin Composition. Lester V. Adams, of Schenectady, New York, assignor to General Electric Co. U. S. P. 1,849,817; March 15, 1932.

The process of dissolving a glycerol phthalate resin in the fully condensed state which consists in heating said resin in an enclosed space with a neutral degelling agent which is capable of dissolving glycerine and phthalic anhydride.

The process of treating a polyhydric alcohol-polybasic acid resin which consists in converting resin by heat to the infusible, vesiculate condition, comminuting the same and heating the heat-hardened resin in contact with a neutral degelling agent which is a solvent for the alcohol and acid from which said resin is derived, until solution occurs.

Production of Synthetic Rubber Polymers. Roscoe H. Gerke, assignor to The Naugatuck Chemical Co., of Naugatuck, Conn. U. S. P. 1,854,186; April 19, 1932.

The method of making a synthetic rubber polymer which comprises polymerizing a 1-3 diene in the presence of an inorganic peroxide and benzoic anhydride, and removing the unpolymerized diene.

Glycerol-Phthalate Synthetic Resin. Darwin R. May, assignor to Westinghouse Electric & Manufacturing Co. U. S. P. 1,852,178; April 5, 1932.

The process of producing a synthetic resin which comprises heating a mixture containing glycerol and phthalic anhydride until a viscous mass is obtained which solidifies, upon cooling, into a partially polymerized resin, cooling the viscous mass, pulverizing the partially polymerized resin and then heating the particles to continue the polymerization of the resin while the particles are being agitated.

Coating Composition. Julius Eisenstein, assignor to Daniel S. Beebe, K. E. Anderson, William C. Dunn, and Julius Eisenstein, trustees, known as Chicago Paint Co. U. S. P. 1,852,706; April 5, 1932.

A composition suitable for use in carrying out the present invention may be formed by admixing thor-

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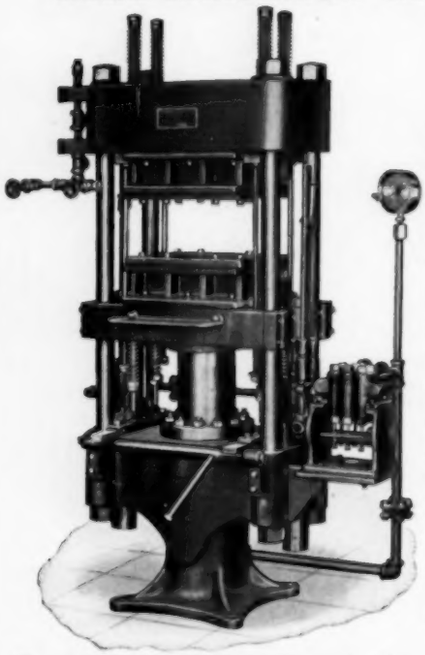

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oughly in a dry state casein, urea, hexamethylenetetramine and lime together with pigments, fillers, or other additional inert constituents, as may be desired. The constituents are thoroughly ground, preferably to the fineness of paint pigments, either before or after mixing, it being advantageous to grind and mix together the casein, urea and hexamethylenetetramine and subsequently thoroughly mix and grind together the resulting mixture with the remaining constituents. With respect to the pigments or fillers employed, if a white coating or paint is desired, lithophone and zinc oxide may be employed, or titanium oxide and barium sulfate or other white pigments as desired. Venetian red, for example, is a suitable pigment for use if a red coating is desired. The proportion of the constituents of the mixture may be varied within very wide limits, as illustrated by the following specific examples.

		Parts
(a)	Casein	1000
	Urea	340
	Hexamethylenetetramine	210
	Lithopone	6950
	Zinc oxide	1000
	Lime	500

Condensation Product and Method of Making Same. Fritz Pollak and Alfons Ostersetzer, Austria, assignors to Pollopas Ltd., of Nottingham, England. U. S. P. 1,854,600; April 19, 1932.

Process for the manufacture of condensation products from a phenol and formaldehyde, distinguished thereby that a reaction mixture containing a phenol and an aldehyde, approximately in the proportion of 1 mol. of phenol to 2.5 mols. formaldehyde at least in the last phase of the condensation process, in the presence of alkaline reacting condensation agents in an amount corresponding to at least 0.32% by weight of NaOH as compared with the weight of phenol, is heated so that the condensation product does not precipitate but remains in solution, whereupon the solution is neutralized and then thickened by heating, the sol thus formed allowed to gelatinize and the gel obtained hardened.

Condensation Products of Formaldehyde and Carbamides. Alphonse Gams and Gustave Widmer, of Basel, Switzerland, assignors to The Firm Society of Chemical Industry of Basel, Switzerland. U. S. P. 1,854,986; April 19, 1932.

A process for the manufacture of clear synthetic resins by condensing formaldehyde with a quantity of urea not greater than that corresponding to 1 molecular proportion of urea for each 2 molecular proportions of formaldehyde at a temperature of about 100° C. up to the stage at which a sample of the reaction mixture yields a precipitate on dilution with water, then adding thiourea in such a quantity that the total quantity of urea and thiourea present in the mixture amounts to not less than 1 molecular proportion for each 1.6 molecular proportions of formaldehyde.

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Dent an' Spencer an' Dodd one night
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Bound for Fifth Avenue.
"Where are you going and what do you wish?"
The Old Scribe asked the three.
"We have come to fish for the buyer fish
From Wall to Dykeman Street, see?
Nets of Uniform Durez have we!"
Said Dent an'
Spencer
An' Dodd.

All day long their nets they threw
'Till the contracts had filled up a tome.
Then into the uppers-no-lowers-choo-choo
To bring our fishermen home.
'Twas all so rapid for business sowing
It seemed it could not be,—
Yet huge mixing bins, top center, kept going
While they tackled each consignee,—
And I shall name you the fishermen three;
Dent an'
Spencer
An' Dodd.

Dent an' Spencer are two little guys,
An' Dodd is a little head
Taller. The buyer fish with the salty eyes
Are those not depressionly dead.
So open your eyes while Old Scribe sings
Of wonderful things that be.
Perhaps you shall get those beautiful things
As you rock on the R. R., N. Y. C.
(That's the choo-choo that rocked the fishermen three)
Dent an'
Spencer
An' Dodd.

**Based on a time, early in May, when the famous three were all away in New York at the same time. Eugene Field gets credit for the assist.*

A few changes this month . . . J. F. Walsh is no longer with Arthur D. Little . . . John Taylor ditto with Continental Diamond . . . E. B. Doyle ditto with Synthetic Plastics . . . and Steinberger and Ximenez leave Celluloid . . . Sorenson, formerly of G. E. Pittsfield, has joined Beetle research . . . Dan Parks is now located just outside of Boonton, New Jersey . . . Tom Butterfield, Watertown, an aviation enthusiast, has taken over the Bristol airport . . . Young Carl Siemon is recovering from a bad illness . . . there have been persistent rumors about a new laminator and a new pyroxylin manufacturer, though they have not been substantiated . . . The Durez Data Book (adv.) is a useful volume . . . Shaw Insulator had an exhibit at the Robert Treat, Newark, from May 23-June 4 . . . under the auspices of Newark Chamber of Commerce (picture in our next) . . . Business is still slow and spotty, with little concerted effort being made for profit protection . . . Optimism being shown in the case of the plant which put up this sign; "Open three days a week" . . .

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